Complementary and alternative medicine for children: does it work?

Kathi J Kemper

Center for Holistic Pediatric Education and Research Childrens Hospital 300 Longwood Ave Boston, MA 02115 kemper_k@a1.tch. harvard.edu

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INTRODUCTION AND EPIDEMIOLOGY

The use of complementary and alternative medical (CAM) therapies is increasing considerably in pediatric and adult populations, particularly among affluent and educated persons. About 20% to 30% of general pediatric patients have used 1 or more CAM therapies Rates among adolescents ranges from 50% to 75%. As Rates among patients with chronic, recurrent, or incurable conditions, such as cancer, asthma, rheumatoid arthritis, and cystic fibrosis, range from 30% to 70%. Parents of hospitalized children, particularly those in neonatal and pediatric intensive care units, report keen interest in providing CAM to their children during hospitalization, but often have not discussed their interest in or use of CAM with their child's physician.

Pediatricians and medical institutions have struggled to

adapt to these rapid shifts in culture and patient demand. Most medical schools in the United States and Canada now offer at least 1 course in holistic, complementary, or alternative medicine—these terms being generally interchangeable—and the number and depth of these courses are increasing rapidly. ¹²⁻¹⁷ Physicians, including pediatricians, report a high (over 50%) rate of using CAM therapies themselves, ¹⁸⁻²⁰ and most physicians provide CAM therapies themselves or refer patients to CAM providers. ²¹⁻²⁶ Are physicians pandering to patient demands? Or are there data to suggest that at least for some conditions and some therapies, integrative medicine offers real benefits?

DEFINITIONS

The terms "holistic medicine" and "integrative medicine" describe approaches to patients and therapies, respec-

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tively.²⁷ Holistic medicine refers to caring for the whole patient—body, mind, emotions, and spirit—in the context of the patient's and family's values, culture, and community; this is simply another way of stating the highest ideals of conventional medicine.²⁸ Integrative medicine refers to considering a broad range of therapies and selecting those that have the best evidence of safety and effectiveness in the context of holistic care.²⁹ Integrative medicine takes evidence-based medicine 1 step further by including consideration of all possible therapies, not simply those that have been part of mainstream medical practice.

TREATMENT GOALS

Nearly every study of the epidemiologic characteristics of CAM has underscored the fact that only a few patients and families talk with their physicians about their use of CAM therapies.³⁰ If physicians want to know what families do and what they value, a systematic approach is necessary in taking a history about patients' goals. We consider therapeutic goals in 5 major categories: (1) curing disease, (2) managing or minimizing symptoms, (3) preventing disease, (4) promoting wellness or resilience and minimizing stress or toxins, and (5) achieving inner peace and harmony.

All of these goals are legitimate. To assess in a meaningful way whether a therapy is useful, both clinicians and patients must explicitly understand the goal or goals of treatment. For example, in treating patients in pediatric oncology, acupuncture may be used, not to cure the cancer (goal 1), but to help manage pain and nausea symptoms (goal 2) or to promote a sense of well-being (goals 4 and 5).

CAM OPTIONS

The term CAM encompasses a wide range of disparate therapies that often rely on different philosophies, beliefs, assumptions, and practices. Visits with a homeopathic practitioner typically are lengthy and focus on taking an extensive history, whereas visits with a chiropractor may be brief and focused on a physical examination and adjustment procedures. To understand and remember the range of possible therapies in a clinically useful way, we consider the range of therapeutic options in 4 major domains: biochemical, lifestyle, biomechanical, and bioenergetic (see box). Each domain contains several kinds of therapies. For example, biochemical therapies include medications as well as vitamins, herbs, and other dietary supplements. Biomechanical therapies include massage and chiropractic as well as surgery.

SPECIFIC CONDITIONS AND THERAPIES

Few clinicians would argue with the tenet that patientfocused, humane, holistic care is the ideal of medicine. Nor would modern physicians disagree on the importance

Therapeutic options

Biochemical

- Medications
- Herbs
- · Dietary supplements

Lifestyle

- Diet
- Exercise
- Environment
- · Mind-body

Biomechanical

- Massage
- · Chiropractic: spinal adjustment
- Surgery

Bioenergetic

- Acupuncture
- · Reike, therapeutic touch, laying on of hands
- Prayer and ritual
- Homeopathy

of considering a range of treatment options and using an evidence basis to select those most likely to be beneficial and least costly or harmful. Questions about the effectiveness of CAM tend to focus on the merits of individual therapies for specific conditions and patients rather than the overarching philosophic orientation to patient care.

For the most part, a great deal more evidence is needed to evaluate claims of safety and effectiveness of natural therapies compared with more synthetic medications and surgical approaches. In practice, most pediatricians do not demand rigorous scientific evidence of safety or efficacy before recommending home remedies such as chicken soup, peppermint tea, or vaporizers for children suffering from mild self-limited conditions such as upper respiratory tract infections. On the other hand, common sense demands that more stringent evidence is required for evaluating the effects of more toxic or costly treatments for life-threatening conditions, particularly if effective treatments are already available. As scientific evidence accumulates, therapies considered as CAM may cross the line into mainstream care; this transition appears to be especially easy if financial support and professional advocacy are involved, for example, marketable products or wellorganized practitioners.

DIETARY SUPPLEMENTS

Probiotics (for example, yoghurt) have proved effective in reducing the severity and duration of diarrhea in healthy children³¹⁻³³; many pediatricians have begun recommending increased yoghurt intake for children suffering

from diarrhea and as prophylaxis for those children assigned to antibiotic therapy. Health food stores are replete with medicinal products (capsules, tablets, and liquids) containing lactobacilli that claim to "support healthy intestinal function" or "maintain a healthy balance of intestinal flora." The effectiveness and optimal dosing of such products for children remain unknown.

For many other dietary supplements (such as Saint-John's-wort to treat depression and echinacea to treat the common cold),34-36 there are no published studies on effectiveness for children. Despite the absence of data on pediatric safety and effectiveness, tremendous efforts are being made to market pediatric herbal products, enticing parents and pressuring pediatricians. Pediatricians are especially likely to be cautious about the hazards of the long-term use of herbs. Over the past 40 years, increasing data about the cumulative toxicity of a herb that had been widely used for medical, religious, and recreational purposes for centuries—tobacco—support this cautious approach. Recent studies evaluating herb-drug interactions with Saint-John's-wort (leading to notable declines in serum concentrations of digoxin and other medications) also suggest the need for careful review of scientific data before casually reassuring patients about using herbs.³⁷

LIFESTYLE THERAPIES Mind-body medicine

Hypnosis is an effective preventive therapy for pediatric migraines, ³⁸⁻⁴⁰ chemotherapy-associated nausea and pain, and several behavioral conditions. ⁴¹⁻⁴⁴ Yet, hypnosis and similar mind-body therapies have not been widely dis-



Dr Karen Erickson provides chiropractic care to 9-month-old Alexander Diamond

seminated from behavioral pediatrics to general pediatric practice or specialty areas in which it might be useful in reducing procedure-related anxiety and pain. Currently there are no significant market forces (other than patient demand) promoting the use of mind-body therapies. Teaching such practices demands substantial clinician time, which may be worthwhile over the long term but is poorly reimbursed in some health care systems. Additional research is needed on evaluating the long-term cost-effectiveness of mind-body therapies and developing the most effective strategies for disseminating proven therapies into practice.

BIOMECHANICAL THERAPIES Massage and chiropractic

Like hypnosis, massage has proved helpful in treating several pediatric conditions. These include low birth weight, pain, asthma, attention deficit hyperactivity disorder, and depression. Horeover, massage is enjoyable, safe, and sought after by patients. Het, it is seldom among the therapeutic options considered first by pediatricians. Historically, massage has been tainted by its link with the adult entertainment industry, and it may be viewed as self-indulgent rather than medically indicated. Furthermore, as with mind-body therapies, the time required to provide services, personnel costs, and questions about long-term benefits are substantial barriers to the widespread use of massage therapies for children.

On the other hand, despite that chiropractic is one of the most common alternative therapies sought by families, there is a remarkable absence of randomized controlled clinical trials suggesting that it is a significantly helpful or cost-effective therapy for any major pediatric disease. ^{52,53} Unlike hypnosis and massage therapy, chiropractors have formed a strong professional community that has effectively persuaded the public to pay for their services. ⁵⁴

BIOENERGETIC THERAPIES Acupuncture

Research on acupuncture is finally penetrating into pediatric practice. Recent studies suggest that certain children readily accept acupuncture as a possible treatment option⁵⁵ and that some acupuncturists specialize in treating children.⁵⁶ Whether the benefits noted in adult patients (for example, reducing pain and nausea) are also found in children remains to be seen.^{57,58} Although no unique product is marketed and practitioners have not formed an effective professional guild, acupuncture itself has made intriguing inroads into mainstream medicine; it is now provided as a treatment option in approximately a third of pediatric pain treatment programs at academic medical centers in North America.⁵⁶ The vast majority of pediatric patients and their families pay out of pocket for acupunc-

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ture services, but third-party payment for acupuncture is gradually gaining ground.⁵⁴

COSTS AND BENEFITS

There is a widespread assertion that CAM practices are less expensive than mainstream medicine and that using such therapies will lower overall health care costs. This assertion posits that CAM therapies would replace more expensive mainstream therapies rather than being used in addition to mainstream medicine. This assertion has not undergone rigorous testing. In fact, recent data suggest that including complementary therapies as treatment options increases overall health care costs for adults because CAM therapies are used as "add-ons" rather than replacements. ^{59,60} Similar studies have not been reported for children.

SUMMARY

Pediatric use of CAM therapies is common and increasing, particularly for the sickest children. To answer the question of whether such therapies work, it is essential that pediatricians systematically elicit families' goals and expectations of treatment, be aware of the range of therapies used, be systematic and specific when asking about them, and be aware of the complex interplay among scientific evidence and market forces governing availability of and payment for CAM therapies. These are the elements, not just of complementary or alternative care, but of good pediatric care in the modern era.

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